

# Mini-Projet de Datamart Finance

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## **Objectifs du projet :**

Le département financier de l'entreprise AdventureWorks a besoin de rapports/Tableaux de bord décrivant la situation financière de l'entreprise. Pour ce faire, nous aurons besoin de :

- Créer un Datamart Finance contenant les tables suivantes : FactFinance, DimAccount, DimScenario, DimCurrency, DimOrganization, DimDepartmentGroup, DimDate
- Charger les données dans les tables dimensions et la table de fait
- Restituer les données à partir du Datamart: création d'un cube + Reporting

## **Cahier de charge :**

Chargement des données : au moins 3 dimensions

- DimDate: Génération des données de la dimension Temps à l'aide d'un code SQL à partir d'une date début à préciser
- Au moins une dimension en mode Delta : Slowly changing dimension (Historisation et update)
- Au moins une dimension à charger de la base de données transactionnelles « AdventureWorksYYYY » (YYYY étant l'année de la BD installée)
- Chargement des données de DimCurrency à partir du fichier plat SampleCurrencyList

## **Restitution des données:**

2 méthodes de restitution : Statique et Dynamique : SSRS, accès via Excel, SSAS ou d'autres plateformes de votre choix

## **Outils :**

SQL Server pour la partie ETL et cubes. Outils de restitution au choix.

## **Notation :**

- Exhaustivité: Couverture de toutes les exigences du projet
- Choix judicieux du mode de chargement des données (mode full ou delta à justifier)

- Ergonomie lors de la restitution
- Compréhension des données
- Ingéniosité

### **Code support pour la création du Data Mart:**

1. Créer une base de données : [LightFinanceDW](#)
2. Créer les tables de dimension :

```
USE [LightFinanceDW]
GO
```

```
/***** Object: Table [dbo].[DimAccount] *****/
```

```
CREATE TABLE [dbo].[DimAccount](
    [AccountKey] [int] IDENTITY(1,1) NOT NULL,
    [ParentAccountKey] [int] NULL,
    [AccountCodeAlternateKey] [int] NULL,
    [ParentAccountCodeAlternateKey] [int] NULL,
    [AccountDescription] [nvarchar](50) NULL,
    [AccountType] [nvarchar](50) NULL,
    [Operator] [nvarchar](50) NULL,
    [CustomMembers] [nvarchar](300) NULL,
    [ValueType] [nvarchar](50) NULL,
    [CustomMemberOptions] [nvarchar](200) NULL,
    CONSTRAINT [PK_DimAccount] PRIMARY KEY CLUSTERED
(
    [AccountKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

```
GO
```

```
ALTER TABLE [dbo].[DimAccount] WITH CHECK ADD CONSTRAINT [FK_DimAccount_DimAccount]
FOREIGN KEY([ParentAccountKey])
REFERENCES [dbo].[DimAccount] ([AccountKey])
GO
```

```
ALTER TABLE [dbo].[DimAccount] CHECK CONSTRAINT [FK_DimAccount_DimAccount]
GO
```

```
/***** Object: Table [dbo].[DimScenario] *****/
```

```
CREATE TABLE [dbo].[DimScenario](
    [ScenarioKey] [int] IDENTITY(1,1) NOT NULL,
    [ScenarioName] [nvarchar](50) NULL,
    CONSTRAINT [PK_DimScenario] PRIMARY KEY CLUSTERED
(
    [ScenarioKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

```
GO
```

/\*\*\*\*\* Object: Table [dbo].[DimDate] \*\*\*\*\*/

```
CREATE TABLE [dbo].[DimDate](
    [DateKey] [int] NOT NULL,
    [FullDateAlternateKey] [date] NOT NULL,
    [DayNumberOfWeek] [tinyint] NOT NULL,
    [EnglishDayNameOfWeek] [nvarchar](10) NOT NULL,
    [SpanishDayNameOfWeek] [nvarchar](10) NOT NULL,
    [FrenchDayNameOfWeek] [nvarchar](10) NOT NULL,
    [DayNumberOfMonth] [tinyint] NOT NULL,
    [DayNumberOfYear] [smallint] NOT NULL,
    [WeekNumberOfYear] [tinyint] NOT NULL,
    [EnglishMonthName] [nvarchar](10) NOT NULL,
    [SpanishMonthName] [nvarchar](10) NOT NULL,
    [FrenchMonthName] [nvarchar](10) NOT NULL,
    [MonthNumberOfYear] [tinyint] NOT NULL,
    [CalendarQuarter] [tinyint] NOT NULL,
    [CalendarYear] [smallint] NOT NULL,
    [CalendarSemester] [tinyint] NOT NULL,
    [FiscalQuarter] [tinyint] NOT NULL,
    [FiscalYear] [smallint] NOT NULL,
    [FiscalSemester] [tinyint] NOT NULL,
    CONSTRAINT [PK_DimDate_DateKey] PRIMARY KEY CLUSTERED
(
    [DateKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY],
    CONSTRAINT [AK_DimDate_FullDateAlternateKey] UNIQUE NONCLUSTERED
(
    [FullDateAlternateKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
```

/\*\*\*\*\* Object: Table [dbo].[DimCurrency] \*\*\*\*\*/

```
CREATE TABLE [dbo].[DimCurrency](
    [CurrencyKey] [int] IDENTITY(1,1) NOT NULL,
    [CurrencyAlternateKey] [nchar](3) NOT NULL,
    [CurrencyName] [nvarchar](50) NOT NULL,
    CONSTRAINT [PK_DimCurrency_CurrencyKey] PRIMARY KEY CLUSTERED
(
    [CurrencyKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY],
    CONSTRAINT [AK_DimCurrency_CurrencyAlternateKey] UNIQUE NONCLUSTERED
(
    [CurrencyAlternateKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
    ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
```

/\*\*\*\*\* Object: Table [dbo].[DimOrganization] \*\*\*\*\*/

```

CREATE TABLE [dbo].[DimOrganization](
    [OrganizationKey] [int] IDENTITY(1,1) NOT NULL,
    [ParentOrganizationKey] [int] NULL,
    [PercentageOfOwnership] [nvarchar](16) NULL,
    [OrganizationName] [nvarchar](50) NULL,
    [CurrencyKey] [int] NULL,
    CONSTRAINT [PK_DimOrganization] PRIMARY KEY CLUSTERED
(
    [OrganizationKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

```

GO

```

ALTER TABLE [dbo].[DimOrganization] WITH CHECK ADD CONSTRAINT [FK_DimOrganization_DimCurrency]
FOREIGN KEY([CurrencyKey])
REFERENCES [dbo].[DimCurrency] ([CurrencyKey])
GO

```

```

ALTER TABLE [dbo].[DimOrganization] CHECK CONSTRAINT [FK_DimOrganization_DimCurrency]
GO

```

```

ALTER TABLE [dbo].[DimOrganization] WITH CHECK ADD CONSTRAINT
[FK_DimOrganization_DimOrganization] FOREIGN KEY([ParentOrganizationKey])
REFERENCES [dbo].[DimOrganization] ([OrganizationKey])
GO

```

```

ALTER TABLE [dbo].[DimOrganization] CHECK CONSTRAINT [FK_DimOrganization_DimOrganization]
GO

```

/\*\*\*\*\* Object: Table [dbo].[DimDepartmentGroup] \*\*\*\*\*/

```

CREATE TABLE [dbo].[DimDepartmentGroup](
    [DepartmentGroupKey] [int] IDENTITY(1,1) NOT NULL,
    [ParentDepartmentGroupKey] [int] NULL,
    [DepartmentGroupName] [nvarchar](50) NULL,
    CONSTRAINT [PK_DimDepartmentGroup] PRIMARY KEY CLUSTERED
(
    [DepartmentGroupKey] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

```

GO

```

ALTER TABLE [dbo].[DimDepartmentGroup] WITH CHECK ADD CONSTRAINT
[FK_DimDepartmentGroup_DimDepartmentGroup] FOREIGN KEY([ParentDepartmentGroupKey])
REFERENCES [dbo].[DimDepartmentGroup] ([DepartmentGroupKey])
GO

```

```

ALTER TABLE [dbo].[DimDepartmentGroup] CHECK CONSTRAINT
[FK_DimDepartmentGroup_DimDepartmentGroup]
GO

```

/\*\*\*\*\* Object: Table [dbo].[FactFinance] \*\*\*\*\*/

```

CREATE TABLE [dbo].[FactFinance](
    [FinanceKey] [int] IDENTITY(1,1) NOT NULL,
    [DateKey] [int] NOT NULL,
    [OrganizationKey] [int] NOT NULL,
    [DepartmentGroupKey] [int] NOT NULL,
    [ScenarioKey] [int] NOT NULL,

```

```
        [AccountKey] [int] NOT NULL,  
        [Amount] [float] NOT NULL,  
        [Date] [datetime] NULL  
    ) ON [PRIMARY]
```

GO

```
ALTER TABLE [dbo].[FactFinance] WITH CHECK ADD CONSTRAINT [FK_FactFinance_DimAccount]  
FOREIGN KEY([AccountKey])  
REFERENCES [dbo].[DimAccount] ([AccountKey])  
GO
```

```
ALTER TABLE [dbo].[FactFinance] CHECK CONSTRAINT [FK_FactFinance_DimAccount]  
GO
```

```
ALTER TABLE [dbo].[FactFinance] WITH CHECK ADD CONSTRAINT [FK_FactFinance_DimDate] FOREIGN  
KEY([DateKey])  
REFERENCES [dbo].[DimDate] ([DateKey])  
GO
```

```
ALTER TABLE [dbo].[FactFinance] CHECK CONSTRAINT [FK_FactFinance_DimDate]  
GO
```

```
ALTER TABLE [dbo].[FactFinance] WITH CHECK ADD CONSTRAINT  
[FK_FactFinance_DimDepartmentGroup] FOREIGN KEY([DepartmentGroupKey])  
REFERENCES [dbo].[DimDepartmentGroup] ([DepartmentGroupKey])  
GO
```

```
ALTER TABLE [dbo].[FactFinance] CHECK CONSTRAINT [FK_FactFinance_DimDepartmentGroup]  
GO
```

```
ALTER TABLE [dbo].[FactFinance] WITH CHECK ADD CONSTRAINT [FK_FactFinance_DimOrganization]  
FOREIGN KEY([OrganizationKey])  
REFERENCES [dbo].[DimOrganization] ([OrganizationKey])  
GO
```

```
ALTER TABLE [dbo].[FactFinance] CHECK CONSTRAINT [FK_FactFinance_DimOrganization]  
GO
```

```
ALTER TABLE [dbo].[FactFinance] WITH CHECK ADD CONSTRAINT [FK_FactFinance_DimScenario]  
FOREIGN KEY([ScenarioKey])  
REFERENCES [dbo].[DimScenario] ([ScenarioKey])  
GO
```

```
ALTER TABLE [dbo].[FactFinance] CHECK CONSTRAINT [FK_FactFinance_DimScenario]  
GO
```